

Remarks

Claims 10 - 21 are pending. Favorable reconsideration is respectfully requested.

Claim 10 has been amended to ensure that the claim is interpreted as a single component, moisture curable composition, as referred to on page 1, lines 9-11; page 18, lines 15-25; and the Examples. As the Examiner is aware, in the field of silicone moisture curable compositions, a "single component" composition, also known as an RTV1 composition, contains all necessary ingredients (except water) in a single "component" or "composition." These compositions may be supplied in various forms industrially. For consumer (home) use, they are generally packaged in plastic squeeze tubes or caulking cartridges. They are storage stable for lengthy periods, but rapidly crosslink under the influence of water, even in the presence atmospheric humidity, which is the usual case.

Claim 1 has also been amended to recite the condensable groups. These groups are well known to the skilled artisan, and include only groups which can be storage stable in the absence of water (but in the presence of the remaining ingredients), but which rapidly crosslink, with the elimination of a "small molecule" in the process. The most common condensable groups for reasons of economy and to some degree performance, are alkoxy groups, preferably methoxy and ethoxy groups, silicon bonded OH groups (silanol groups), and acetoxy groups. These groups, upon condensation, liberate methanol, ethanol, water, and acetic acid, respectively. Claim 10 has also been amended to recite the definition for R, taken from claim 11.

The Examiner has inquired about the meaning of the term "pseudohalogen." This term was "coined" in about 1924, and represents groups with activity similar to the halogens. In the case of condensable organosilicon compounds, these are easily hydrolyzable groups. The most common pseudohalogens are N₃⁻, SCN⁻, and CN⁻.

Claim 14 has been amended to correct the spelling of "least." Claim 15 has been amended to recite the formula V and the definitional aspects thereof as has claim 16, from page 12 of the specification. None of the amendments raise any issue of new matter. As a result of

the amendments, withdrawal of the objections to the claims and the rejections of the claims under 35 U.S.C. § 112 is respectfully solicited.

Claims 10, 12, and 13 have been rejected under 35 U.S.C. § 102(b) as anticipated by Schattenmann et al. US 2003/0045666 ("Schattenmann"). Applicants respectfully traverse this rejection.

The Office states that the products of *Schattenmann* have two condensable epoxy groups. This is now irrelevant as Applicants have defined their condensable groups. *Schattenmann* does not teach or suggest any of these. The claims require a moisture curable RTV1 composition. The claims are addressed to one of ordinary skill in the art, who is aware that it is the condensable groups which are responsible for the crosslinking, and these groups must condense so as to crosslink the polymer chains under the influence of moisture. Thus, even prior to amendment, the claims did not read on *Schattenmann*, since the epoxy groups will not condense with each other through the action of water. Epoxy groups are quite stable in water, and aqueous dispersions of common bisphenol A epoxy resins have been available for decades. These emulsions are stable for a long time, even though they consist predominantly of water (water is present in a huge molar excess). They certainly are not moisture curable. Withdrawal of the rejection of claims 10, 12, and 13 over *Schattenmann* under 35 U.S.C. § 102(b) is respectfully solicited.

Claims 10-17 have been rejected as unpatentable over Yu US 2002/0161116 ("Yu") in view of *Schattenmann*. Applicants respectfully traverse this rejection.

Yu is a very confusing reference which is not directed to the same field of endeavor as Applicants. Applicants' invention pertains to moisture curable compositions which are stable with the exclusion of water and crosslink in the presence of water to form an elastomer. *Yu* is directed to the treating of textiles to make them water repellent. *Yu* is not an analogous reference. It is well established that a non-analogous reference cannot be employed for any purpose in rejecting the claims of an application.

The standards for determining whether a reference is analogous or non-analogous are set forth in *In re Clay*, 23 USPQ 2d 1058 (Fed. Cir. 1992):

Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *In re Deminski*, 796 F.2d 436, 442, 230 USPQ 313, 315 (Fed. Cir. 1986); *In re Wood*, 599 F.2d 1032, 1036, 202 USPQ 171, 174 (CCPA 1979).

The PTO argues that *Sydansk* and *Clay*'s inventions are part of a common endeavor -- "maximizing withdrawal of petroleum stored in petroleum reservoirs." However, *Sydansk* cannot be considered to be within *Clay*'s field of endeavor merely because both relate to the petroleum industry.

Here, the field of endeavor of *Yu* is the treatment of fabrics to impart water repellency by contacting the fabric with an aqueous dispersion of various silicon compounds and curing at elevated temperature (165°C). The field of endeavor of Applicants is the preparation of antimicrobial moisture curing RTVI elastomer compositions, e.g., caulks and sealants. The fields of endeavor are not the same, and therefore the first prong of the *Clay* test is not met.

Neither are the problems solved similar. The problem addressed by Applicants is providing long term antimicrobial character to an RTV1 elastomer. The problem addressed by *Yu* is to provide a water repellent coating. The problems addressed by the references are in no way similar, and the second prong of the *Clay* test is also not met. *Yu* is not an analogous reference, and the rejection must be withdrawn for this reason.

However, even were *Yu* an analogous reference, the combination of *Schattenmann* and *Yu* does not teach or suggest the present invention. *Schattenmann* teaches non-crosslinkable (non-moisture curable) quaternary ammonium group-containing compounds. These compounds are prepared by reacting an epoxy-functional organopolysiloxane with an amine compound. Several process variants are disclosed, but in each, the preferred stoichiometry is 2:1, and thus

in most cases, there will be an excess of epoxy groups. However, as the secondary and tertiary amines used in the process are catalysts for the reaction of epoxy groups with water, and since water is present in the reaction, the end products do not contain measurable epoxy group content. See, e.g., the examples, where the end groups detectable are -OH, -Cl, and -N(CH₃)₂. The OH groups are from the ring opening of the epoxy group, are not Si-OH groups, and are not condensable groups. The polymer of *Schattenmann* has no condensable groups which would allow it to react to form an elastomer. For example, the *Schattenmann* polymers could be laid down as a bead or plaque and stored in 50% relative humidity without crosslinking.

The composition of *Yu* is an aqueous textile treating composition, and is clearly not moisture curable. If it were, it would rapidly gel in the aqueous dispersions of *Yu*, yet he states that these compositions are storage stable. No one skilled in the art of moisture curable RTV1 elastomer compositions would consider any teachings from *Yu*. One desirous of preparing, for example, a moisture curing sealant composition which is stable enough in its cartridge to survive manufacturing, shipping, warehousing, and sitting on store shelves for extended periods, yet which rapidly cures upon being exuded from the cartridge, would not look to *Yu*, as his compositions are stable even as aqueous dispersions. Imagine the chagrin of a home handyman who lays down a bead of caulk to seal his window, shower, or bathtub, only to find that the caulk refuses to cure? The compositions of *Yu* require application to the substrate and heating at elevated temperature (165°C, 329°F). Would the homeowner take out his torch and heat the bead to this high temperature? Applicants think not. One skilled in the art of moisture-curable RTVI compositions would not look to *Yu*.

Moreover, adding the quaternary ammonium compounds of *Schattenmann* to the composition of *Yu* would not be feasible, except to form a polymer mixture. The *Schattenmann* polymers do not have residual epoxy groups to react. Nor do they have any condensable groups. As these compounds have water solubilizing groups, they should leach out of a water repellent textile coating upon washing, which is what *Yu* wishes to avoid. *Yu* includes only ingredients which all react with each other at elevated temperature to form a polymer. The quaternary ammonium-functional organopolysiloxanes would not react. They might even "phase out" due

to their very different nature (highly polar) as compared to the remaining ingredients of *Yu* which are non-polar or react to form non-polar structures.

Withdrawal of the rejection over *Yu* in view of *Schattenmann* under 35 U.S.C. § 103(a) is respectfully solicited.

Applicants were very surprised that their condensable quaternary amine-functional organopolysiloxanes could be formulated into an RTV1 composition and produce a high quality elastomer. The quaternary ammonium-functional compounds are quite different from the compounds traditionally used, which are, for the most part, non-polar polydimethylsiloxanes. That a stable composition could be prepared using these very polar organopolysiloxanes, and that an elastomer with excellent properties could be obtained was very surprising. Also surprising was the high antimicrobial action achieved. In most compositions, antimicrobial action requires some very limited water solubility of the antimicrobial ingredient. Here, the antimicrobial agents are polymerized into the polymer, and are definitely no longer water soluble. Yet, the antimicrobial activity was high.

Applicants submit that the claims are now in condition for Allowance, and respectfully request a Notice to that effect. If the Examiner believes that further discussion will advance the prosecution of the Application, he is highly encouraged to telephone Applicants' attorney at the number given below.

The Petition fee of \$ 490.00 is being charged to Deposit Account No. 02-3978 via electronic authorization submitted concurrently herewith. The Commissioner is hereby authorized to charge any additional fees or credit any overpayments as a result of the filing of this paper to Deposit Account No. 02-3978.

Respectfully submitted,

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Date: February 6, 2009

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